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Revision and catalogue of worldwide staghorn corals  
*Acropora* and *Isopora* (Scleractinia: Acroporidae)  
in the Museum of Tropical Queensland

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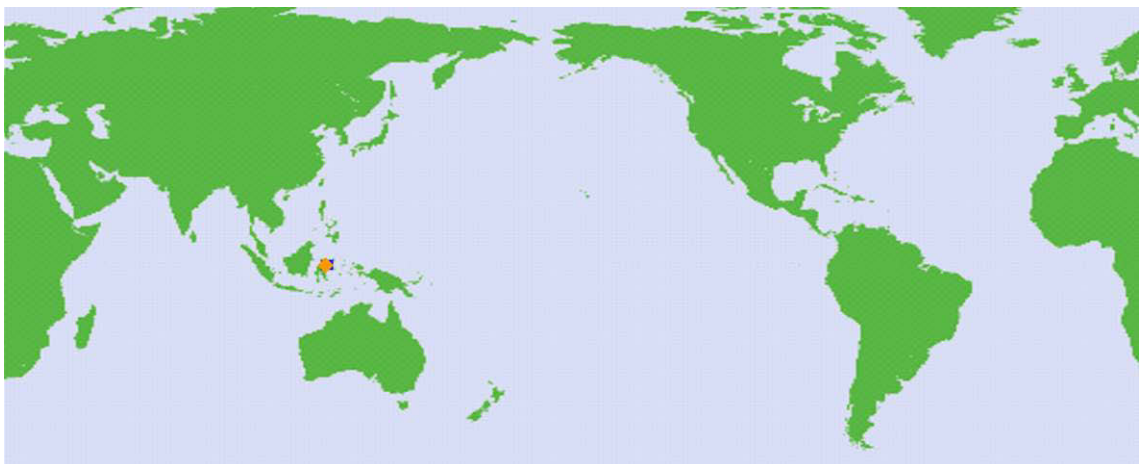


FIG. 122. *Isopora togianensis*, Togian Islands, Indonesia, 1999 (photo: B. Hoeksema). Map of documented distribution: blue squares = MTQ specimens; pink squares = literature records; orange diamonds = type localities (where given), including primary synonyms.

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## LITERATURE CITED

- Adjeroud, M., Pichon, M. & Wallace C.C. 2009. High latitude, high coral diversity at Rapa, in southernmost French Polynesia. *Coral Reefs* **28**: 459.
- Babcock, R.C., Bull, G.D., Harrison, P.L., Heyward, A.J., Oliver, J.K., Wallace, C.C. & Willis, B.L. 1986. Synchronous spawnings of 105 scleractinian coral species on the Great Barrier Reef. *Marine Biology* **90**: 379–394.
- Bassett-Smith, G.W. 1890. Report on the corals from the Tizard and Macclesfield Banks, China Sea. *Annals and Magazine of Natural History* **6**(6): 353–374.
- Bernard, H.M. 1900. Marine fauna of Christmas Is. Indian Ocean. *Proceedings of the Zoological Society London* **1901**: 115–141.
- Bongaerts, P., Kline, D.I., Hoegh-Guldberg, O., Bridge, T.C.L., Muir, P.R., Wallace, C.C., Beaman, R.J., Faichney, I.D.E., Pizarro, O. & Mitchell, B.G. 2011. Mesophotic coral ecosystems on the walls of Coral Sea atolls. *Coral Reefs* **30**: 335.
- Boschma, H. 1961. *Acropora* Oken, 1815 (Anthozoa, Madreporaria): proposed validation under the plenary powers. *Bulletin of Zoological Nomenclature* **18**: 334–335.
- Bridge, T.C.L., Fabricius, K.E., Bongaerts, P., Wallace, C.C., Muir, P.R., Done, T.J., & Webster, J.M. 2012. Diversity of Scleractinia and Octocorallia in the mesophotic zone of the Great Barrier Reef, Australia. *Coral Reefs* **31**: 179–189.
- Bromfield, K. & Pandolfi, J.M. 2011. Regional patterns of evolutionary turnover in Neogene coral reefs from the central Indo-West Pacific Ocean. *Evolutionary Ecology* **26**: 375–391.
- Brook, G. 1891. Descriptions of new species of *Madrepora* in the collections of the British Museum. *Annals and Magazine of Natural History* **8**(6): 458–471.
1892. Preliminary descriptions of new species of *Madrepora* in the collections of the British Museum. Part II. *Annals and Magazine of Natural History* **10**(6): 451–465.
1893. The genus *Madrepora*. *Catalogue of the Madreporarian Corals in the British Museum (Natural History)* **1**: 1–212.
- Brüggemann, F. 1877. Neue Korallen-Arten aus dem Rothen Meer und von Mauritius. *Abhandlingen herausgegeben vom naturwissenschaftlichen Vereine zu Bremen* **5**: 395–400.
1879. Corals in Zoology of Rodriguez. *Philosophical Transactions of the Royal Society of London, Biological Science. Series B* **168**: 569–579.

- Budd, A.F. & Wallace, C.C. 2008. First record of the Indo-Pacific reef coral genus *Isopora* in the Caribbean region: Two new species from the Neogene of Curaçao, Netherlands Antilles. *Palaeontology* **51**: 1387–1401.
- Cabioch, G., Wallace, C.C., McCulloch, M.T., Zibrowius, H., Laboute, P. & Richer de Forges, B. 2011. Disappearance of *Acropora* from the Marquesas (French Polynesia) during the last deglacial period. *Coral Reefs* **30**: 1101–1105.
- Cairns, S.D. 2001. Beautiful reef builders. *Science* **292**: 1492.
- Carpenter, K.E., Harrison, P.L., Hodgson, G., Alsaffar, A.H. & Alhazeem, S.H. 1997. *The Corals and Coral Reef Fishes of Kuwait*. (Kuwait Institute for Scientific Research: Kuwait). 166 pp.
- Carpenter, K.E., Abrar, M., Aeby, G., Aronson, R.B., Banks, S., Bruckner, A., Chiriboga, A., Cortes, J. *et al.* 2008. One-third of reef-building corals face elevated extinction risk from climate change and local impacts. *Science* **321**: 560–563.
- Chan, A.L., Choi, C.L., McCorry, D., Chan, K.K., Lee, M.W. & Put, A. 2004. *Field Guide to Hard Corals of Hong Kong*. (Agriculture, Fisheries and Conservation Dept.: Hong Kong). 373pp.
- Chen, I.-P., Tang, C.-Y., Chiou, C.-Y., Hsu, J.-H., Wei, N.V., Wallace, C.C., Muir, P., Wu, H. & Chen, C.A. 2009. Comparative analyses of coding and non-coding DNA regions indicate that *Acropora* (Anthozoa: Scleractinia) possesses a similar evolutionary tempo of nuclear vs. mitochondrial genomes as in plants. *Marine Biotechnology*. **11**: 141–152.
- Chevalier, J-P. 1961. Recherches sur les Madréporaires et les formations récifales Miocenes de la Méditerranée Occidentale. *Mémoires de la Société Géologique de France* **93**: 493–502.
- China, W.E. 1963. Opinion 674: *Acropora* Oken, 1815 (Anthozoa, Madreporaria): Validated under the plenary powers. *Bulletin of Zoological Nomenclature* **20**: 319–330.
- Connell, J.H., Hughes, T. & Wallace, C.C. 1997. A 30-year study of coral abundance, recruitment, and disturbance at several scales in space and time. *Ecological Monographs* **67**: 461–488.
- Connell, J.H., Hughes, T.P., Wallace, C.C., Tanner, J.E. & Harms, K.E. 2004. A long term study of competition and diversity of corals. *Ecological Monographs* **74**: 179–210.
- Crossland, C. 1952. Madreporaria, Hydrocorallinae, *Heliopora* and *Tubipora*. *Scientific Reports on the Great Barrier Reef Expedition 1928–29*. **6**(3): 85–257.
- Dai, C.-F. & Horng, S. 2009. *Scleractinia Fauna of Taiwan. I. The Complex Group*. (National Taiwan University: Taipei: Taiwan). 172 pp.
- Dana, J.D. 1846. Zoophytes. *United States Exploring Expedition during the years 1838, 1839, 1840, 1841, 1842, under the command of Charles Wilkes, U.S.N.* **7**: 1–740.
- Donner, S. 2008. Predictions for the future of the Caribbean. Pp. 129–134. In, Wilkinson, C. & Souter, D. (Eds), *Status of Caribbean coral reefs after bleaching and hurricanes in 2005*. (Global Coral Reef Monitoring Network and Reef and Rainforest Research Centre: Townsville). 152 pp.
- Duchassaing, P. & Michelotti, J. 1860. Mémoire sur les Coralliaires des Antilles. *Mémoires de l'Académie des Sciences de Turin série 2*. **19**: 56–87.
- Eguchi, M. & Shirai, S. 1977. In, Shirai, S., *Ecological encyclopedia of the marine animals of the Ryukyu Islands*. (Okinawa Kyoiku Shuppan: Japan). 636 pp.
- Ehrenberg, C.G. 1834. Beiträge zur physiologischen Kenntniss der Corallenthiere im allgemeinen, und besonders des Rothen Meeres, nebst einem Versuche zur physiologischen Systematik derselben. *Abhandlungen der Königlichen Akademie der Wissenschaften zu Berlin* **1**: 225–380.
- Fabricius, K.E. 2005. Effects of terrestrial runoff on the ecology of corals and coral reefs: review and synthesis. *Marine Pollution Bulletin*, **50**: 125–146.
- Fosså, S.A. & Nilsen, A.J. 1998. *The Modern Coral Reef Aquarium, Volume 2*. (Birgit Schmettkamp Verlag: Germany). 480 pp.
- Fukami, H., Omori, M. & Hatta, M. 2000. Phylogenetic relationships in the coral family Acroporidae, reassessed by inference from the mitochondrial genes. *Zoological Sciences* **17**: 689–696.
- Fukami, H., Chen, C.A., Budd, A.F., Collins, A., Wallace, C., *et al.* 2008. Mitochondrial and nuclear genes suggest that stony corals are monophyletic but most families of stony corals are not (Order Scleractinia, Class Anthozoa, Phylum Cnidaria). *PLoS ONE* **3**(9): e3222.
- Gardiner, J.S. 1898. On the perforate corals collected by the author in the South Pacific. *Proceedings of the Zoological Society London* **66**: 257–276, pls 23–24.
- Gardner, T.A., Côte, I.M., Gill, J.A., Grant, A. & Watkinson, A.R. 2003. Long-term region-wide declines in Caribbean corals. *Science* **301**: 958–960.
- Harriott, V. J. & Banks, S.A. 2002. Latitudinal variation in coral communities in eastern Australia: a qualitative biophysical model of factors regulating coral reefs. *Coral Reefs* **21**: 83–94.
- Harrison, P. L. 2011. Sexual reproduction of scleractinian corals. Pp. 59–85. In, Dubinsky, Z. & Stambler, N. (Eds), *Coral Reefs: An Ecosystem in Transition*, Part 3. (Springer: Netherlands). 552 pp.
- Hodgson, G. & Carpenter, K. 1995. Scleractinian corals of Kuwait. *Pacific Science* **49**: 227–246.



- Hoffmeister, J.E. 1925. Some corals from American Samoa and the Fiji Islands. *Papers from the Department of Marine Biology of the Carnegie Institution for Science, Washington* **22**: 1-90.
- Horn, H. 1861. Description of new corals in the Museum of the Academy. *Proceedings of the Academy of Natural Sciences of Philadelphia* **1860**: 435-436.
- International Commission of Zoological Nomenclature. 1999. *International Code of Zoological Nomenclature*. Fourth Edition. (International Trust for Zoological Nomenclature: London). 306 pp.
- International Commission of Zoological Nomenclature. 2011. Coral taxon names published in 'Corals of the world' by J.E.N. Veron (2000): potential availability confirmed under Article 86.1.2. *Bulletin of Zoological Nomenclature* **68**(3): 162-166.
- Kenyon, J.C. 1997. Models of reticulate evolution in the coral genus *Acropora* based on chromosome numbers: parallels with plants. *Evolution* **5**: 756-767.
- Klunzinger, C.B. 1879. *Die Korallenthiere des Rothen Meeres*. Gutmann: Berlin. 2, 1-88, pl. 1-10; 3: 1-100, pl. 1-10.
- Lamarck, J.B.P. 1816. *Histoire naturelle des Animaux sans vert bres. Tome 2* (Verdi re: Paris). 568 pp.
- Latypov, Y.Y. 1992. Scleractinian corals of Vietnam. Part II. Acroporidae. *Marine Science*: 133. (in Russian).
- Linnaeus, C. 1758. *Systema Naturae I Regnum Animale*. (Cura Societatis Zoologi Germani : Lipsi ). Editio decima.
- Loya, Y., Sakai, K., Nakano, Y. & Van Woesik, R. 2001 Coral bleaching: the winners and the losers. *Ecology Letters* **4**: 122-131.
- Mangubhai, S. & Harrison P.L. 2006. Seasonal patterns of coral reproduction on equatorial reefs in Mombasa, Kenya. Pp. 106-114. In, Suzuki, Y., Nakamori, T. et al. (Eds), *Proceedings of the 10th International Coral Reef Symposium, Okinawa, Japan, Volume 1*.
2008. Asynchronous coral spawning patterns on equatorial reefs in Kenya. *Marine Ecology Progress Series* **360**: 85-96.
2009. Extended breeding seasons and asynchronous spawning among equatorial reef corals in Kenya. *Marine Ecology Progress Series* **374**: 305-310.
- Marshall, P.A. & Baird, A.H. 2000. Bleaching of corals on the Great Barrier Reef: differential susceptibilities among taxa. *Coral reefs* **19**: 155-163.
- McMillan, J. & Miller, D.J. 1988. Restriction analysis and DNA hybridization applied to the resolution of *Acropora nobilis* and *Acropora formosa*. Pp. 775-777. In, Choat, J.H. et al. (Eds), *Proceedings of the 6th International Coral Reef Symposium, Townsville, Australia, Volume 2*.
1989. Nucleotide sequences of highly repetitive DNA from scleractinian corals. *Gene* **83**: 185-186.
1990. Highly repeated DNA sequences in the scleractinian coral genus *Acropora*: evolution of cloned repeats as taxonomic probes. *Marine Biology* **104**: 483-487.
- Milne Edwards, H. & Haime, J. 1860. *Histoire naturelle des coralliaires ou polypes proprement dits. Tome 3. Suite de la section des Madréporaires apores*. (Librairie Encyclopédique de Roret: Paris). 326 pp.
- Nakamura, E., Yokohama, Y. & Tanaka, J. 2004. Photosynthetic activity of a temperate coral *Acropora pruinosa* (Scleractinia, Anthozoa) with symbiotic algae in Japan. *Phycology Research* **52**: 38-44.
- Nemanzo, F. 1967. Systematic studies on Philippine shallow-water Scleractinians: V. Suborder Astrocoeniida (*Montipora* and *Acropora*). *Natural and Applied Science Bulletin* **18**: 193-223.
1971. Systematic studies on Philippine shallow-water scleractinians: VII Additional forms. *Natural and Applied Science Bulletin* **23**: 142-185.
1976. Some new Philippine scleractinian reef corals. *Natural and Applied Science Bulletin* **28**: 229-276.
- Nishihira, M. & Veron, J.E.N. 1995. *Hermatypic Corals of Japan*. (Kaikyusya: Japan). 439 pp.
- Nomura, K. & Mezaki, T. 2005. Reef building corals from Otsuki, Kochi Prefecture, Japan. *Kuroshio Biosphere* **2**: 29-41.
- Noreen, A.M.E. 2010. Ecological and evolutionary connectivity of reef corals in subtropical eastern Australia: implications for the persistence of high-latitude coral populations. PhD thesis, Southern Cross University, Lismore, Australia.
- Oken, L. 1815. Steinkorallen. *Lehrbuch Naturgeschichte* **3**: 59-74.
- Ortmann, A. 1888. Studien über Systematik und geographische Verbreitung der Steinkorallen. *Zoologische Jahrbücher (Jena) Abteilung für Systematik, Geographie und Biologie der Thiere* **3**: 143-188, pl. 6.
1889. Beobachtungen an Steinkorallen von der Südküste Ceylons. *Zoologische Jahrbücher (Jena) Abteilung für Systematik, Geographie und Biologie der Thiere* **4**: 493-590, pls 11-18.
1892. Die Korallriffe von Dar-es-Salaam und Umgegend. *Zoologische Jahrbücher (Jena) Abteilung für Systematik, Geographie und Biologie der Thiere* **6**: 631-670, pl. 29.
- Perrin, C. & Bosellini, F.R. 2012. Paleobiogeography of scleractinian reef corals: Changing patterns during the Oligocene-Miocene climatic transition in the Mediterranean. *Earth-Science Reviews* **111**: 1-24.

- Phongsuwan, N. 1998. Extensive coral mortality as a result of bleaching in the Andaman Sea in 1995. *Coral Reefs* **17**: 70.
- Pichon, M., Benzoni, F., Chaineau, C-H. & Dutrieux, E. 2010. *Field Guide to the Hard Corals of the Southern Coast of Yemen*. (Biotope: France). 256 pp.
- Pickett, J.W., Thompson, C.H., Kelley, R.A. & Roman, D. 1985. Evidence of higher sea level during isotopic stage 5C in Queensland, Australia. *Quaternary Research* **24**: 103–114.
- Pillai, C.S.G. & Scheer, G. 1976. Report on the stony corals from the Maldive Archipelago. Results of the Xarifa Expedition 1957/58. *Zoologica (Stuttgart)* **43**: 1–83, pls 1–32.
- Pillay, R.M., Terashima, H., Venkatasami, A. & Uchida, H. 2002. *Field guide to Corals of Mauritius*. (Ministry of Fisheries: Mauritius). 334 pp.
- Pratchett, M.S. 2001. Influence of coral symbionts on feeding preferences of crown-of-thorns starfish *Acanthaster planci* in the western Pacific. *Marine Ecology Progress Series* **214**: 111–119.
- Putchim, L., Thongtham, N., Hewett, A. & Chansang, H. 2008. Survival and growth of *Acropora* spp. in mid-water nursery and after transplantation at Phi Phi Islands, Andaman Sea, Thailand. Pp. 1263–1266 *In*, Riegl, B.M. & Dodge, R.E. (Eds.) *Proceedings of the 11th International Coral Reef Symposium, Ft. Lauderdale, Florida, Volume 2*.
- Quelch, J.J. 1886. Report on the reef-corals collected by H.M.S. *Challenger* during the years 1873–76. *Report of the Scientific Results of the Voyage of H.M.S. Challenger*. *Zoology* **16**: 1–203.
- Rehberg, H. 1892. Neue und wenig bekannte Korallen. *Abhandlungen der Naturwissenschaften Verein, Hamburg* **12**: 1–50, pls 1–4.
- Richards, Z.T., Beger, M., Pinca, S. & Wallace C.C. 2008. Bikini Atoll coral biodiversity resilience five decades after nuclear testing. *Marine Pollution Bulletin* **56**: 503–516.
- Richards, Z.T., van Oppen, M.J.H., Wallace, C.C., Willis B.L., & Miller, D.J. 2008. Some rare Indo-Pacific coral species are probable hybrids. *PLoS ONE* **3**(9): e3240.
- Richards, Z. T. & Wallace, C.C. 2004. *Acropora rongelapensis* sp. nov., a new species of *Acropora* from the Marshall Islands (Scleractinia: Astrocoeniina: Acroporidae). *Zootaxa* **590**: 1–5.
- Richards, Z.T, Wallace, C.C. & Miller, D.J. 2010. Archetypal ‘elkhorn’ coral discovered in the Pacific Ocean. *Systematics and Biodiversity* **8**(2): 281–288.
- Riegl, B. 1995. Description of four new species in the hard coral genus *Acropora* Oken, 1815 (Scleractinia: Astrocoeniina: Acroporidae) from south-east Africa. *Zoological Journal of the Linnean Society* **113**: 229–247.
- Sheppard, C.R.C. & Sheppard, A.L.S. 1991. Corals and coral communities of Arabia. Pp. 3–170. *In*, Büttiker, W. & Krupp, F. (Eds), *Fauna of Saudi Arabia*, Volume 12 (Pro Entomologia: Basel).
- Schuster, F. 2002. Oligocene and Miocene examples of *Acropora*-dominated palaeoenvironments: Mesohellenic Basin (NW Greece) and northern Gulf of Suez (Egypt). Pp. 199–204. *In*, Moosa, M.K. (Ed.), *Proceedings of the 9th International Coral Reef Symposium, Bali, Indonesia, Volume 1*.
- Studer, T. 1878. Zweite abteilungen der Anthozoa polyactinia, welche während der Reise S.M.S. *Corvette Gazelle* um die Erde gesammelte wurden. *Monatsberichte der Königlich Preussischen Akademie der Wissenschaften zu Berlin* **1878**: 524–550, pls. 1–5.
1880. Beitrag zur Fauna der Steinkorallen von Singapore. *Mittheilungen der Naturforschenden Gesellschaft in Bern* **979**: 15–53.
- Turak, E. & DeVantier, L. 2011. *Field Guide to Reef-building Corals of Brunei Darussalam*. (Ministry of Industry and Primary Resources: Brunei Darussalam). 256 pp.
- Van Oppen, M.J.H., Willis, B.L., Vugt, H.W.J.A. & Miller, D.J. 2000. Examination of species boundaries in the *Acropora cervicornis* group (Scleractinia, Cnidaria) using nuclear DNA sequence analyses. *Molecular Ecology* **9**: 1363–1373.
- Vaughan, T.M. 1906. Report on the scientific results of the expedition to the eastern tropical Pacific VI Madreporaria. *Bulletin of the Museum of Comparative Zoology* **50**: 59–72.
1918. Some shoal-water corals from Murray Islands, Cocos-Keeling Islands, and Fanning Islands. *Papers of the Department of Marine Biology of the Carnegie Institution of Washington* **9**: 51–234.
- Veron, J.E.N. 1985. New Scleractinia from Australian coral reefs. *Records of the Western Australian Museum* **12**: 147–183.
1986. *Corals of Australia and the Indo-Pacific*. (Angus and Robertson: Sydney). 644 pp.
1990. New Scleractinia from Japan and other Indo-Pacific countries. *Galaxea* **9**: 95–173.
2000. *Corals of the World*. (Australian Institute of Marine Science: Townsville). 1382 pp.
2002. New species described in Corals of the World. *Australian Institute of Marine Science Monograph Series* **11**: 1–206.
- Veron, J.E.N. & Marsh, L.M. 1988. Hermatypic corals of Western Australia. Records and annotated species list. *Records of the Western Australian Museum Supplement* **29**: 1–136.

- Veron, J.E.N. & Wallace, C.C. 1984. Scleractinia of eastern Australia V. Family Acroporidae. *Australian Institute of Marine Science Monograph Series* 6. 485 pp.
- Verrill, A.E. 1864. List of the polyps and corals sent by the Museum of Comparative Zoology to other institutions in exchange, with annotations. *Bulletin of the Museum of Comparative Zoology Harvard University* 1: 29–60.
1866. Synopsis of the polyps and corals of the North Pacific Exploring Expedition, 1853–1856, III. With descriptions of some additional species from the west coast of North America. *Proceedings of the Essex Institute* 5: 17–50.
1869. Polyps and corals of the North Exploring Expedition Additions and corrections. *Communications of the Essex Institute* 6: 51–70.
1901. Variations and nomenclature of Bermudian, West Indian and Brazilian reef corals, with notes on various Indo-Pacific corals. *Transactions of the Connecticut Academy of Arts and Sciences* 11: 63–168.
1902. Notes on corals of the genus *Acropora* (*Madrepora* Lamarck) with new descriptions and figures of types, and of several new species. *Transactions of the Connecticut Academy of Arts and Science* 11: 207–266.
- Vollmer, S.V. & Palumbi, S.R., 2002. Hybridization and the evolution of reef coral diversity. *Science* 296: 2023–2025.
- Von Marenzeller, E. 1907. Riftkorallen Expeditionen S.M. *Pola* in das Rote Meer. Zoologische Ergebnisse XXVI. *Denkschriften Akademie der Wissenschaften in Wien* 80: 27–97.
- Von Prael, H. & Mejia, A. 1985. Primer informe de un coral acroporido, *Acropora valida* (Dana, 1846) (Scleractinia: Astrocoeniina: Acroporidae) para el Pacifico americano. *Revista de Biología Tropical* 33: 39–43.
- Wallace, C.C. 1978. The coral genus *Acropora* (Scleractinia: Astrocoeniina: Acroporidae) in the central and southern Great Barrier Reef Province. *Memoirs of the Queensland Museum* 18: 273–319, pls 43–103.
1994. New species and a new species group of the coral genus *Acropora* from Indo-Pacific locations. *Invertebrate Taxonomy* 8: 961–988.
1997. New species and new records of recently named species of the coral genus *Acropora* from Indonesian reefs. *Zoological Journal of the Linnean Society* 120: 27–50.
1999. *Staghorn Corals of the World: A revision of the coral genus Acropora (Scleractinia; Astrocoeniina; Acroporidae) worldwide, with emphasis on morphology, phylogeny and biogeography*. (CSIRO: Melbourne). 421 pp.
2001. Wallace's line and marine organisms: The distribution of staghorn corals (*Acropora*) in Indonesia. Pp. 168–178. In, Metcalfe, I. (Ed.) *Faunal and Floral Migrations and Evolution in SE Asia-Australasia*. (Balkema: Rotterdam). 416 pp.
2003. Journey to the heart of the centre: Origins of high faunal diversity in the central Indo-Pacific from the perspective of an acropologist. Pp. 33–39. In, Moosa, M.K. (Ed.), *Proceedings of the 9th International Coral Reef Symposium, Bali, Indonesia. Volume 1*.
2008. New species and records from the Eocene of England and France support early diversification of the coral genus *Acropora*. *Journal of Paleontology* 82: 313–328.
2012. Acroporidae of the Caribbean. *Geologica Belgica*. (in press).
- Wallace, C.C., Phongsuwan, N. & Muir, P.R. 2012. A new species of staghorn coral, *Acropora sirikitiae* sp. nov. (Scleractinia: Astrocoeniina: Acroporidae) from western Thailand. *Phuket Marine Biology Center Research Bulletin* 71: 117–124.
- Wallace, C.C. & Budd, A.F. 2009. Mirror-image fossils reveal colony form of extinct Curaçao *Isopora*. *Coral Reefs* 28: 715.
- Wallace, C.C., Chen, C.A., Fukami, H. & Muir, P.R. 2007. Recognition of separate genera within *Acropora* based on new morphological, reproductive and genetic evidence from *Acropora togianensis* and elevation of the subgenus *Isopora* Studer, 1878 to genus. *Coral Reefs* 26: 231–239.
- Wallace, C.C. & Christie, C. 1992. Reproductive status of corals in December 1987. Pp. 61–66. In, Longmore, R. (Ed.), *Reef Biology: A survey of Elizabeth and Middleton Reefs, South Pacific*. (Australian National Parks and Wildlife Service Publication: Canberra). 230 pp.
- Wallace, C.C. & Dai, C.-F. 1997. Scleractinia of Taiwan (IV): Review of the coral genus *Acropora* from Taiwan. *Zoological Studies* 4: 288–324.
- Wallace, C.C., Fellegara, I., Muir, P.R. & Harrison, P.L. 2009. The scleractinian corals of Moreton Bay, Queensland, Australia: high latitude, marginal assemblages with increasing species richness. In, Davie, P.J.F. & Phillips, J.A. (Eds), *Proceedings of the Thirteenth International Marine Biological Workshop, the Marine Fauna and Flora of Moreton Bay, Queensland*. *Memoirs of the Queensland Museum – Nature* 54(2): 1–118.
- Wallace, C.C. & Muir, P.R. 2005. Biodiversity of the Indian Ocean from the perspective of staghorn corals (*Acropora* spp). *Indian Journal of Marine Sciences* 34: 42–49.
- Wallace, C.C., Muir P.R. & Venkatesh, M. 2007. Post-bleaching renewal of the dominant reef-building coral species *Acropora abrotanoides* in the Lakshadweep islands of India. *Coral Reefs* 26: 45.

- Wallace, C.C., Pandolfi, J., Young, M. & Wolstenholme, J. 1991. Indo-Pacific coral biogeography: A case study from the *Acropora selago* group. Pp. 199–210. In, Ladiges, P.Y., Humphries, C.J. & Martinelli, L.W. (Eds.), *Austral Biogeography*. (CSIRO: Melbourne). 227 pp.
- Wallace, C.C., Paulay, G., Hoeksema, B.W., Bellwood, D.R., Hutchings, P.A., Barber, P.H., Erdmann, M. & Wolstenholme, J. 2003. Nature and origins of unique high diversity reef faunas in the Bay of Tomini, Central Sulawesi: The ultimate “center of biodiversity”? Pp. 185–192. In, Moosa, M.K. (Ed.), *Proceedings of the 9th International Coral Reef Symposium, Bali, Indonesia, Volume 1*.
- Wallace, C.C., Richards, Z., Suharsono 2001. Regional distribution patterns of *Acropora* and their use in the conservation of coral reefs in Indonesia. *Indonesian Journal of Marine and Coastal Resources* 4: 1–19.
- Wallace, C.C. & Rosen, B.R. 2006. Diverse staghorn corals (*Acropora*) in high-latitude Eocene assemblages: Implications for the evolution of modern diversity patterns of coral reefs. *Proceedings of the Royal Society B* 273: 975–982.
- Wallace, C.C. & Willis, B.L. 1994. Systematics of the coral genus *Acropora*: Implications of new biological findings for species concepts. *Annual Review of Ecology and Systematics* 25: 237–262.
- Wallace, C.C. & Wolstenholme, J. 1998. Revision of the coral genus *Acropora* (Scleractinia: Astrocoeniina: Acroporidae) in Indonesia. *Zoological Journal of the Linnean Society* 123: 199–384.
- Wallace, C.C. & Zahir, H. 2007. The ‘Xarifa’ expedition and the atolls of the Maldives, 50 years on. *Coral Reefs* 26: 3–5.
- Wei, N.-W., Wallace, C.C., Dai, C.-F., Moothien-Pillay, K.R. & Chen, C.A. 2006. Analyses of the ribosomal internal transcribed spacers (ITS) and the 5.8S gene indicate that extremely high rDNA heterogeneity is a unique feature in the scleractinian coral genus *Acropora* (Scleractinia; Acroporidae). *Zoological Studies* 45: 404–418.
- Wells, J.W. 1936. The nomenclature and type species of some genera of recent and fossil corals. *American Journal of Science* 31, 97–134.
1950. New genera of Mesozoic and Cenozoic corals. *Journal of Paleontology* 11: 73–77.
1954. Recent corals of the Marshall Islands. *Professional Papers of the U.S. Geological Survey* 260: 385–486.
1985. Notes on Indo-Pacific Scleractinian Corals II. A new species of *Acropora* from Australia. *Pacific Science* 39: 338–339.
- Willis, B.L., Babcock, R.C., Harrison, P. L. & Wallace, C.C. 1997. Experimental hybridisation and breeding incompatibilities within the mating systems of mass spawning reef corals. *Coral Reefs Supplement* 16: S53–S65.
- Wolstenholme, J., Wallace, C.C & Chen, C. 2003. Species boundaries within the *Acropora humilis* species group (Cnidaria; Scleractinia): a morphological and molecular interpretation of evolution. *Coral Reefs* 22: 155–166.





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## TABLE OF CONTENTS

### Volume 1 (issued 17 February 2012)

- AHYONG, S.T. — Polychelid lobsters (Decapoda: Polychelida: Polychelidae) collected by the CIDARIS expeditions off Central Queensland, with a summary of Australian and New Zealand distributions. . . . . 1
- FERGUSON, D., MATHIESON, M. & EYRE, T. — Southerly range extension of the poorly known, Queensland endemic yellow-naped snake *Furina barnardi* (Squamata: Elapidae) into the Mulga Lands. . . . . 9
- HITCHCOCK, G., FINN, M.A., BURROWS, D.W. & JOHNSON, J.W. — Fishes from fresh and brackish waters of islands in Torres Strait, far north Queensland. . . . . 13
- KOHOUT, R.J. — A review of the Australian *Polyrhachis* ants of the subgenera *Myrma* Billberg, *Myrmatopa* Forel, *Myrmothrinax* Forel and *Polyrhachis* Fr. Smith (Hymenoptera: Formicidae: Formicinae). . . . . 25
- LANDAU, I., CHAVATTE, J.-M. & BEVERIDGE, I. — *Johnsprentia copemani* gen. nov., sp. nov. (Haemoproteidae), a parasite of the flying-fox, *Pteropus alecto* (Pteropidae), from Queensland. . . . . 61
- PENDOLEY, K. & CHRISTIAN, M. — A summary of Marine Turtle records for Norfolk Island. 67
- VIVES, E. — Two new genera of myrmecomorph longicorn beetles from Australia and New Caledonia (Insecta: Coleoptera: Cerambycidae). . . . . 79
- BAEHR, M. — The genus *Coptoglossus* Chaudoir in eastern Australia (Insecta: Coleoptera: Carabidae: Lebiinae). . . . . 85
- BAEHR, M. — Three peculiar new genera of lebiine carabid beetles from Queensland, Australia (Insecta: Coleoptera: Carabidae: Lebiini). . . . . 99
- BARTHOLOMAI, A. — The pachyrhizodontid teleosts from the marine Lower Cretaceous (latest mid to late Albian) sediments of the Eromanga Basin, Queensland, Australia. . . . . 119
- DAVIE, P.J.F. — A review of *Macrophthalmus sensu lato* (Crustacea: Decapoda: Macrophthalmidae) from Australia, including two new species and new records. . . . . 149
- DAVIE, P.J.F. — A revision of *Neosesarma* (Crustacea: Decapoda: Sesarmidae) with the description of a new species. . . . . 221
- IN MEMORIAM — Patricia Mather (née Kott). . . . . 235
- SEEMAN, O.D. — Larva and deutonymph of *Promegistus armstrongi* Womersley (Acari: Mesostigmata: Trigynaspida: Promegistidae). . . . . 255
- NOTES
- SHEA, G.M. — Emendation of the specific name of the frog *Neobatrachus sudelli* (Lamb, 1911) (Anura: Myobatrachidae). . . . . 116

### Volume 2 (issued 30 June 2012)

- WALLACE, C.C., DONE, B.A. & MUIR, P.R. — Revision and catalogue of worldwide staghorn corals *Acropora* and *Isopora* (Scleractinia: Acroporidae) in the Museum of Tropical Queensland. . . . 1–255